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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,240	04/20/2001	Junji Hirano	0038-0355P	9184
2292 7390 11/19/2003 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER DAVIS, ROBERT B	
			ART UNIT 1722	PAPER NUMBER

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/838,240

Applicant(s)

HIRANO ET AL.

Examiner

Robert B. Davis

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-12 and 16 is/are rejected.
- 7) ☒ Claim(s) 3, 13 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4/20/01.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### DETAILED ACTION

1. Applicant's election with traverse of Group I, claims 1-16 in Paper No. 8/25/2003 is acknowledged. *The traversal is on the ground(s) that there is no serious burden in examining distinct inventions classified in different classes 425 and 414. This is not found persuasive because of applicants allegation that joinder of these distinct inventions would not present a serious burden to the U. S. Patent and Trademark Office. This allegation relied on the unsupported assumption that the search and examination of both inventions would be coextensive. However, the issues raised in the examination of molding apparatus claims are divergent from those raised in the examination of material handling claims. Further, while there may be some overlap in the searches of the two inventions, there is no reason to believe that the searches would be identical. Therefore, based on the additional work involved in searching and examining both distinct inventions together, restriction of the distinct inventions is clearly proper. The search for Group I does not require a search of class 414; therefore, the serious burden on the PTO is the search and examination of an invention classified in another Tech Center.*

*The species election requirement is hereby withdrawn and claims 1-16 will be examined.*

2. Claims 17-20 are hereby withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8/25/2003.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –*

*(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

4. Claims 1, 2, 4, 5, and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Harmsen (5,654,017: figures 1-4; column 1, line 62 to column 2, line 57; and column 3, line 60 to column 4, line 13).

Harmsen teaches a resin molding machine (1), comprising: a work piece feeding unit (8); a product accommodating unit (17); a press unit (3, 4) for molding a work piece; a loader (21) for conveying the work piece (9) from said work piece feeding unit to said press unit; an unloader (22) for taking out a molded product (16) from said press unit; common rail sections (6), on which said loader and said unloader are moved to convey the work piece and the molded product; and an additional rail unit having a rail section, on which said loader and said unloader can be moved, said additional rail unit being detachably attached between said work piece feeding unit and said product accommodating unit, wherein the common rail sections and the rail section of said additional rail unit are disconnect-ably connected. As can be seen if figures 1, 3 and 4, the Harmsen apparatus has a modular apparatus wherein the press units (3, 4) have rail sections (6) that can be connected to each other and a base section supporting the rail sections, as well as product accommodating section (17)

Art Unit: 1722

which has rail sections (6) and a base, and workpiece feeding unit (8) which has rail sections (6) and a base. Therefore, the rail sections located on the bases of the press units (3, 4) and the product accommodating section (17) and the workpiece feeding unit (8) make up the common and additional rail units. In regards to claim 7, Harmsen teaches that a cleaning means is attached to the carrier (21) and therefore acts as a functional section provided at the press unit position. The carrier (21) is equipped for feeding not only lead frames (23), but also resin pellets (24) transferred from resin feeder (10). The loader (21) comprises a section (21) that moves along tracks according to arrow (P4) such that the loader is an "intermediate die feeding section".

5. Claims 11, 12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyajima (5,891,483: figures 1, 2, 10, 13, 14 and 15; and column 16, lines 18-37).

Miyajima teaches a resin molding machine comprising: a work piece feeding unit (80); a product accommodating unit (60); a press unit (12, 14) for molding a work piece; a loader (50) for conveying the work piece and resin for molding from said work piece feeding unit to said press unit; an unloader (50) for conveying a molded product from said press unit to said product accommodating unit; a film feeding section (18-figure 13) for feeding release film onto a parting face of said press unit, said film feeding section being provided on one side of said press unit; and a film collecting section (116) for collecting used release film, said film collecting section being provided on the other side of said press unit, wherein said film feeding section and said film collecting section can be moved

Art Unit: 1722

away from said press unit by motors (122, 128) along slide guides (126, 132) as shown in figure 13. The film feeding section (18) and the film collecting section are located on and movable with the top mold (12-figure 13). The film feeding section further includes a film feeding roller (18) and pinch rollers (112) that act as a tension roller and a guide roller. As illustrated in figure 13, the film collecting section has a guide roller located before tension rollers (116, 117).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harmsen taken together with Miyajima (5,891,483: figures 13-15 and column 16, lines 18-37).

Harmsen discloses all claimed features except for the use of a film unit.

Miyajima discloses a feeding means for feeding a release film (10) to molding dies to facilitate in removal of the molding articles from the mold cavity and to obviate the need for cleaning the molds.

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the apparatus of Harmsen by using a film feeding means as disclosed by Miyajima for the purpose of eliminating the need for cleaning of the mold surfaces and to improve release of the molded article from the mold.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harmsen taken together with Desmond et al (3,797,103: figures 2, 5 and 6; column 4, lines 18-52 and column 13, lines 44-60).

Harmsen discloses all claimed features except for the heat sink feeding section.

Desmond et al disclose a heat sink feeding section (200) for feeding a heat sink (104A) that forms part of an encapsulated article (column 13, lines 44-61).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the apparatus of Harmsen by having a separate heat sink feeding assembly as disclosed by Desmond et al because the heat sink is a well known packaged semiconductor product element which helps to remove heat

from the chip and it would have been obvious to use a separate feeding assembly for the heat sink as part of a semiconductor product producing line.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyajima.

Miyajima discloses two different embodiments. Figure 13 illustrates all claimed features except that the tension rollers (116, 117) feed the used release film to an accommodating bin instead of winding the film on a collecting roll. Figure 14 illustrates a film collecting roll (19) for winding up the used release film. It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the embodiment of figure 13 by using a film collecting roll as shown in figure 14 as the tension rollers (116, 117) in combination with an accommodating bin are equivalents of a film collecting roll wherein the collecting roll has the advantage of keeping the used release film in a controlled manner on the upper die.

#### ***Allowable Subject Matter***

11. Claims 3, 13 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: In regards to claim 3, none of the prior art of record teaches an apparatus of claim 1 wherein the unloader, work piece feeding unit and product accommodating unit respectively have suction ducts, and the rail section of the additional rail unit has a sucking duct, which is capable of connecting to the



sucking duct of the unloader and communicating to the suction ducts of the work piece feeding unit and the product accommodating unit. Harmsen discloses a modular apparatus, but does not disclose or suggest suction ducts in the additional rail unit that communicate with the suction ducts of the workpiece feeding unit and product accommodating unit. In regards to claim 13, none of the prior art teach or suggest an apparatus as in claim 12, wherein one of the film feeding section and the film collecting section can be turned with respect to the press unit. Harmsen discloses that the feeding section and the film collecting section can be moved toward and away from the plane of the parting face of the upper die, but does not disclose or suggest either sections being able to be turned with respect to the die. In regards to claim 15, Harmsen discloses sensors (120) for monitoring the release film feeding, but the reference does not disclose or suggest sensors for detecting revolution numbers of the tension roller and driving sources which rotate the tension rollers are controlled on the basis of output signals of the sensors.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining references show various semiconductor encapsulation devices.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert B. Davis whose telephone number is 703-308-2625. In December, the examiner's number will change to 571-272-1129. The examiner can normally be reached on Monday-Friday 9-5:30.

Application/Control Number: 09/838,240  
Art Unit: 1722

Page 9

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Robert B. Davis  
Primary Examiner  
Art Unit 1722

11/14/2005